What is claimed is:

1. An adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase and with addition of heat again desorbs during a subsequent desorption phase at higher temperatures and with a condenser that leads condensed working medium through a connection line to the evaporator which is in turn connected with the adsorbent through a working medium vapor line and which takes up heat from the medium to be cooled during the adsorption phase, wherein the condenser is coupled to a buffer reservoir that buffers at least a part of the condensation heat of the working medium vapor and that can again dissipate the stored heat into the surroundings even during the adsorption phase.

2. An adsorption cooling apparatus according to Claim 1, wherein the evaporator is arranged such that it releases relatively little heat to the medium to be cooled during the desorption phase.

3. An adsorption cooling apparatus according to Claim 1, wherein the evaporator is arranged in the upper region of the medium to be cooled and the medium that is being heated during the desorption phase does not mix with the cooler medium located below it because of its lower density.

4. An adsorption cooling apparatus according to Claim 1, further comprising a cold storing element arranged below the evaporator.

5. An adsorption cooling apparatus according to Claim 1, wherein during the desorption phase, the medium to be cooled is prevented from exchanging heat with the already cooled medium by means of a shutoff device.

6. An adsorption cooling apparatus according to Claim 1, wherein the desorption heat that is added during the desorption phase is input by a burner.

7. An adsorption cooling apparatus according to Claim 1, wherein the adsorbent contains zeolite and the working medium contains water.

8. An adsorption cooling apparatus according to Claim 1, wherein a condensate is collected in a condensate buffer at a lower level, and is drawn into the higher level of the evaporator at the beginning of the adsorption phase.

9. An adsorption cooling apparatus according to Claim 1, wherein the evaporator contains wetting agents which effect a homogeneous distribution of the liquid working medium inside the evaporator.

10. An adsorption cooling apparatus according to Claim 1, wherein the working medium vapor line contains a regulation element which narrows the flow cross section when the evaporator temperatures are too low.

11. An adsorption cooling apparatus according to Claim 10, wherein the regulation element contains a bimetal element.

12. An adsorption cooling apparatus according to Claim 1, further comprising a radiation screen arranged below the evaporator.

13. A method for the operation of an adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase, and that, with addition of heat, again desorbs during a subsequent desorption phase at higher temperatures, and with a connected condenser that leads condensed working medium into an evaporator which is in turn connected with the adsorbent through a working medium vapor line, wherein the desorption phase has less than one-third the duration of the adsorption phase, and that the condensation heat is buffered during the desorption phase by a heat reservoir medium, and that most of the buffered heat is again dissipated during the adsorption phase.

14. A method for the operation of an adsorption cooling apparatus according to Claim 13, wherein during the desorption phase, which is caused by a high heating power, a temperature gradient of more than 100 K between the heat uptake surface and the heat release surface is produced inside the adsorbent.